

**Remarks****Rejection Under 35 USC § 103**

The Examiner adheres to his position that claims 1, 3-14 and 25 are obvious over JP 07-289898 ('898). '898 discloses a catalyst suitable for hydroprocessing which catalyst comprises a group VIA metal, a group VIII iron group metal on a coal or cellulose base organic material. The catalyst may comprise 0.5-30% by weight of a group VIA metal, and 1-50% by weight of a group VIII metal. The Examiner indicates that if both upper limits were to be combined, i.e. 30 wt% and 50 wt%, the total amount of group VI and VIII metal complies with the requirement of claim 1. The Examiner further indicates that higher amounts are contemplated (see [0040]).

Applicant has acknowledged that there is an overlap between the possible upper ranges of '898 and the instant claims with regard to the total amount of group VI and VIII metals. However, applicant most strongly maintains that patentability of the instant claims is not precluded, since applicant has established that the obtained results are unobvious and unexpected, and the instant claims do not read upon a particular embodiment disclosed by '898 (see *Ex parte Thumm*, 132 USPQ 66).

The Examiner states that an explicit example is not required in order for a reference to meet the limitation of a claim, but the law is very clear that although two ranges might overlap to a certain extent, such circumstance does not preclude the grant of a patent when the applicant satisfactorily establishes that he obtains results which are unobvious and unexpected and that his claims do not read upon a particular embodiment of the reference. Applicant continues to emphasize the importance of the holding in *Ex parte Thumm*. In that case the amount of an amine in a prior art reference covered a rather broad range, while

the claims at issue covered a much narrower range, with the two ranges overlapping, but the claims at issue did not read upon a particular embodiment (a stated value of an amount of amine).

The court in *Ex parte Thumm* held that the rejection of the claims at issue could not be sustained and the decision of the examiner in that regard was reversed. Like the circumstances in *Ex parte Thumm*, the circumstances in the instant application are such that an explicit disclosed embodiment, whether an example or otherwise, would be required to meet the requirement of the instant claims with regard to the Group VIII and Group VIB metals. There is no such explicit disclosed embodiment.

The advantage achieved by applicant did not flow naturally from following the suggestion of the prior art. The suggestion of the prior art was clearly that amounts larger than the mentioned upper limits may produce a lower activity (see last sentence of [0040]). Applicant ignored the explicit teaching of the prior art and achieved a surprising and unexpected result, the very antithesis of obviousness.

Just as important to the present invention as the total amount of group VI and VIII metals, are the requirements of combustible binder material that is inert under hydroprocessing conditions and a side crushing strength of the catalyst composition of at least 1 lbs/mm. The requirement concerning inert binding material is as defined in the sentence bridging pages 7 and 8 of the instant text. One way of achieving this requirement is having a high carbon content in the combustible binder, as discussed in the first complete paragraph on page 8 of the instant text, i.e. at least about 50 wt.% of carbon.

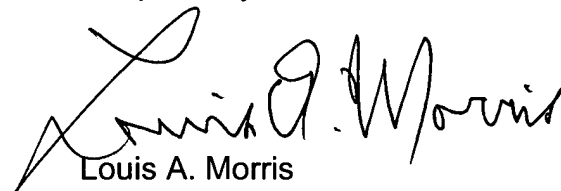
It is apparent that '898 is not concerned with a catalyst binder being inert under hydroprocessing conditions, since the binder it discloses has a carbon content of less than 65wt.%, [0021] to [0023].

As for side crushing strength, disclosed in the paragraph bridging pages 8 and 9 of the instant text, in marked contradistinction from the requirement of the instant claims is the teaching of '898 of a low strength as follows from the discussion at [0013], i.e. "It is the comparatively soft inflammable support..."

### Conclusion

The specific requirements of the instant claims of the total amount of group VI and VIII metals, combustible binder material that is inert under hydroprocessing conditions and a side crushing strength of the catalyst composition of at least 1 lbs/mm, so far remove the present invention from the disclosures of '898 that '898 is irrelevant to the patentability of the present invention. Applicant respectfully requests that the instant claims be allowed and issued in due course.

Respectfully submitted,



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